CLAIMS:

1. A method of forming a liner, including the steps of mixing a water-based dispersion of polyurethane with a cementitious material to form a wet mixture and applying the wet mixture to a surface, to form the liner.

2. The method according to claim 1, wherein the % mass of the water-based dispersion of polyurethane in the wet mixture ranges between 40 and 80%.

3. The method according to claim 2, wherein the % mass of the water-based dispersion of polyurethane in the wet mixture ranges between 60 and 70%.

4. The method according to any one of claims 1 to 3, wherein the water-based dispersion of polyurethane includes additives which improve the evaporation of liquid of the wet mixture.

5. The method according to claim 4, wherein the additives include a low boiling point alcohol.

6. The method according to claim 5, wherein the low boiling point alcohol is isopropanol or ethanol.

7. The method according to claim 6, wherein the % mass of the additives in the wet mixture ranges between 0 to 5%.

8. The method according to any one of claims 1 to 7, wherein the cementitious material includes anhydrous calcium sulphate.

9. The method according to claim 8, wherein the % mass of the anhydrous calcium sulphate in the wet mixture ranges between 5 and 35%.

10. The method according to claim 9, wherein the % mass of the anhydrous calcium sulphate in the wet mixture ranges between 10 and 20%.

11. The method according to claim 10, wherein the % mass of the anhydrous calcium sulphate in the wet mixture ranges between 15 and 17%.

12. The method according to any one of claims 1 to 11, wherein an epoxy hardener and an epoxy resin form part of the wet mixture.

13. The method according to claim 12, wherein the epoxy hardener is included in the water-based dispersion of polyurethane.

14. The method according to claim 12, wherein the % mass of the epoxy hardener in the wet mixture is in the range of 1 to 10% and the % mass of the epoxy resin in the wet mixture is in the range of 1 to 10%.

15. The method according to claim 12 wherein the % mass of the epoxy hardener in the wet mixture is approximately 5% and the % mass of the epoxy resin in the wet mixture is approximately 5%.

16 The method according to any one of claims 12to 15 wherein the epoxy resin is mixed with a liquid carrier prior to being mixed with the epoxy hardener.

17 The method according to any one of claims 14 to 16, wherein the liquid carrier is an amorphous precipitated silica.

18. The method according to claim 14 or claim 15, wherein the mixture of the epoxy resin and the liquid carrier is in powder form and is combined with the cementitious material.

19. The method according to any one of claims 1 to 18, wherein the wet mixture is applied to a surface by spraying, casting, rolling or brushing.

20. The method according to claim 19, wherein the wet mixture is sprayed in a fine mist onto the surface by a spray gun.

21. The method according to claim 19 or claim 20, wherein the surface is a wall in a mine or the liner for a swimming pools or any other water proofing application and the wet mixture applied to the surface has a thickness between 0.1 to 5 mm.

22. The method according to claim 19, wherein the wet mixture applied to the surface has a thickness between 0.1 to 1.5 mm.

23. A kit for the production of a wet mixture for forming a liner, the kit including:

- a first component including a water-based dispersion of polyurethane; and
- second component including a cementitious material.

24. The kit according to claim 23, wherein the % mass of the water-based dispersion of polyurethane in the wet mixture ranges between 40 and 80%.

25. The kit according to claim 24, wherein the % mass of the water-based dispersion of polyurethane in the wet mixture ranges between 60 and 70%.

26. The kit according to any one of claims 23 to 25, wherein the first component includes additives which improve the evaporation of liquid of the wet mixture.

27. The kit according to claim 26, wherein the additives include a low boiling point alcohol.

28. The kit according to claim 27, wherein the low boiling point alcohol is isopropanol or ethanol.

29. The kit according to claim 28, wherein the % mass of the additives in the mixture ranges between 0 to 5%.

30. The kit according to any one of claims 24 to 29, wherein the second component includes anhydrous calcium sulphate.

31. The kit according to claim 30, wherein the % mass of the anhydrous calcium sulphate ranges between 5 and 35%.

32. The kit according to claim 31, wherein the % mass of the anhydrous calcium sulphate in the wet mixture ranges between 10 and 20%.

33. The kit according to claim 32, wherein the % mass of the anhydrous calcium sulphate in the wet mixture ranges between 15 and 17%.

34. The kit according to any one of claims 23 to 33, wherein an epoxy hardener and an epoxy resin form part of the wet mixture.

35. The kit according to claim 34, wherein the epoxy hardener is included in the first component.

36. The kit according to claim 35, wherein the % mass of the epoxy hardener in the wet mixture is in the range of 1 to 10% and the % mass of the epoxy resin in the wet mixture is in the range of 1 to 10%.

37. The kit according to claim 36, wherein the % mass of the epoxy hardener in the wet mixture is approximately 5% and the % mass of the epoxy resin in the wet mixture is approximately 5%.

38. The kit according to any one of claims 34 to 37, wherein the epoxy resin is dispersed with a quantity of liquid carrier to adsorb the liquid onto the liquid carrier.

39. The kit according to claim 38, wherein the liquid carrier is an inert fine grade of silica.

40. The kit according to claim 38 or claim 39, wherein the epoxy resin and liquid carrier is in powder form and is combined with the cementitious material forming the second component.

41. A wet mixture for forming a liner, the wet mixture including a water-based dispersion of polyurethane and a cementitious material.

42. The wet mixture according to claim 41, wherein the % mass of the water-based dispersion of polyurethane in the wet mixture ranges between 40 and 80%.

43. The wet mixture according to claim 42, wherein the % mass of the water-based dispersion of polyurethane in the wet mixture ranges between 60 and 70%.

44. The wet mixture according to any one of claims 41 to 43, wherein the water-based dispersion of polyurethane includes additives which improve the evaporation of liquid of the wet mixture.

45. The wet mixture according to claim 44, wherein the additives include a low boiling point alcohol.

46. The wet mixture according to claim 45, wherein the low boiling point alcohol is isopropanol or ethanol.

47. The wet mixture according to claim 46, wherein the % mass of the additives in the mixture ranges between 0 to 5%.

48. The wet mixture according to any one of claims 41 to 47, wherein the cementitious material includes anhydrous calcium sulphate.

49. The wet mixture according to claim 48, wherein the % mass of the anhydrous calcium sulphate ranges between 5 and 35%.

50. The wet mixture according to claim 49, wherein the % mass of the anhydrous calcium sulphate in the wet mixture ranges between 10 and 20%.

51. The wet mixture according to claim 50, wherein the % mass of the anhydrous calcium sulphate in the wet mixture ranges between 15 and 17%.

52. The wet mixture according to any one of claims 41 to 51, wherein an epoxy hardener and an epoxy resin form part of the wet mixture.

53. The wet mixture according to claim 52, wherein the epoxy hardener is included in the water-based dispersion of polyurethane.

54. The wet mixture according to claim 53, wherein the % mass of the epoxy hardener in the wet mixture is in the range of 1 to 10% and the % mass of the epoxy resin in the wet mixture is in the range of 1 to 10%.

55. The wet mixture according to claim 54, wherein the % mass of the epoxy hardener in the wet mixture is approximately 5% and the % mass of the epoxy resin in the wet mixture is approximately 5%.

56. The wet mixture according to any one of claims 52 to 55 wherein the epoxy resin is mixed with a liquid carrier to form a powder prior to being mixed with the epoxy hardener.

57. The wet mixture according to claim 56, wherein the liquid carrier is an amorphous precipitated silica.

58. The wet mixture according to claim 56 or claim 57, wherein the mixture of epoxy resin and the liquid carrier is in powder form and is combined with the cementitious material.

59. A liner, including a water-based dispersion of polyurethane and a cementitious material.

60. The liner according to claim 59, wherein the water-based dispersion of polyurethane includes additives which improve the setting of the liner.

61. The liner according to claim 60, wherein the additives include a low boiling point alcohol.

62. The liner according to claim 61, wherein the low boiling point alcohol is isopropanol or ethanol.

63. The liner according to any one of claims 59 to 62, wherein the cementitious material includes anhydrous calcium sulphate.

64. The liner according to any one of claims 59 to 63, wherein an epoxy hardener and an epoxy resin form part of the liner.

65. The liner according to claim 64, wherein the epoxy hardener is included in the water-based dispersion of polyurethane.

66. The liner according to claim 64 or claim 65, wherein the epoxy resin is mixed with a liquid carrier to form a powder prior to being mixed with the epoxy hardener.

67. The liner according to claim 64, wherein the liquid carrier is an amorphous precipitated silica.

68. The liner according to claim 66 or claim 67, wherein the mixture of epoxy resin and the liquid carrier is in powder form and is combined with the cementitious material.